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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,553	11/28/2001	Sung-Won Lee	678-716	2837

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EXAMINER	
HEINRICHS, CHRISTOPHER P	
ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/996,553	LEE ET AL.	
	Examiner	Art Unit	
	Christopher P. Heinrichs	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *28 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-21 and 23-28* is/are rejected.

7)☒ Claim(s) *7 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim recites the limitation "determining whether a second parameter associated with a period of the service class is short or not..." This limitation is assumed to refer to the parameter β as disclosed in the specification, as the specification discloses that this parameter relates to a period. However, nowhere in the specification text or drawings is an explanation of what it means for this parameter to be "short" or "not short." Paying particular attention to fig 4, the Examiner asks the question "does β_Forward = 1 mean "short," or does β_Forward = 0 mean "short"? Since Jitter is used in the inequality 402, one may deduce that the result of the ratio represents a "jitter time value per packet," and that if this value is less than a threshold, meaning the time is short, then the parameter is 1. However, if there are no packets (the "N" result of inequality 401) the parameter equals 0. Since there is no explanation of what "short" means, this claim is does not enable one skilled in the art to make use of the invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 4 recites the limitation "each measured total number" in line 3. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 4 depends on claim 1. Claim 1 includes only a single measured number of packets; therefore the limitation "each" in claim 4 renders it indefinite.

7. Claim 9 recites the limitation "determining the parameter based..." in line 5 of the claim. It is unclear which parameter is referred to. There are two parameters that may serve as the antecedent for this limitation, "the first parameter" or "the second parameter." While Claim 9 clearly states that it is an extension of the step of determining "the first parameter," there is not limitation in the claim that excludes an interrelationship between the first and second parameters. Applicant should identify which parameter this limitation refers to.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,023,456 to Chapman et al.

10. With regard to claim 1, Chapman discloses a method for classifying a service class for transmission of packet data (see title) served in a two-way communication network (fig 2) which supports transmission of packet data having various quality of service (best effort, real time, low latency, etc, as will be shown below), comprising the steps of measuring a total number of packet data for a period of time (any 1 second) associated with a classification of service class (UDP Low Latency) (see col 5 lines 57-60); determining a parameter based on whether the measured number of packet data is larger than a threshold value (parameter is true or false result of the inequality of col 5 line 58, threshold in the example is "25") associated with a two-way communication characteristic of the packet data transmission (UDP Low Latency category, col 3 line 54 – col 4 line 4, is associated with the Interactive Users category by being part of the same group of classifications, which is two-way because it includes Telnet and web browsing); and calculating a value used to classify the service class of the packet data

by using the parameter (the values are seen in col 3 and col 4, with Interactive Users having class value 1, Bulk Transfer with guaranteed bandwidth having class value 2, Bulk Transfer Best Effort having class value 3, etc).

11. Claims 5-6, 13-21 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by US PGPUB 2004/0013089 submitted by Taneja et al.

12. With regard to claims 5 and 6, Taneja discloses a method for classifying a service class for transmission of packet data in a two-way communication network which supports transmission of packet data having various quality of service, comprising: measuring a number of detected packet data (IN_IP_PKTS, p13 para 199); dividing a jitter value by the measured number of packet data (p13 eq 24); determining a parameter (logical result of inequality) based on whether or not the divided value is larger than a threshold value associated with traffic characteristics of the packet data transmission (p14 inequality 29); and calculating a value to classify the service class of packet data by using the parameter (QSG I, II, or III, p14 paragraphs 218 – 221). Fig 10 shows that the classification occurs in forward and reverse links as depicted by the "Application Flow" arrow.

13. With regard to claim 13, Taneja discloses means for controlling the operation of a base station controller (fig 2A item 16), means (fig 2A item 14) for connecting a base transceiver system (fig 2A items 42 and 40) to a gateway (fig 2A item 10 serves as a

gateway to PSTN 30), means for routing packet data traffic (fig 2A item 24), and means for multiplexing and de-multiplexing packet data (fig 2A item 42, see page 3 paragraph 43) that is transmitted or received from a forward and reverse link (bi-directional arrow between fig 2A items 42 and 44).

14. With regard to claim 14, Taneja discloses means for connecting a base transceiver system (fig 2A items 42 and 40) to a base system controller (fig 2A item 10), means for communicating (fig 2A items 46 and 44) with a mobile station (fig 2B), means for controlling the operation of the base transceiver system (fig 2A item 12B), means for determining paths of traffic based on quality of service (fig 2A item 12A, see page 3 paragraph 47), and a plurality of channel cards located between said determining means and said communicating means (fig 2A items 42 and 12B).

15. With regard to claim 15-19, Taneja discloses an apparatus comprising a main processor (fig 2A item 4) for measuring a total number of packet data (as set forth in the rejection of claim 5) for a period of time (time "t") associated with a classification of service class (one of groups I – VI of page 8), and for determining a parameter (logical result of inequality 22 of page 13) based on whether the measured number of packet data is larger than a threshold value (Θf_k) associated with a two-way communication characteristic of the packet data transmission (fig 10 shows two way communication), and for calculating a value used to classify the service class of the packet data by using the determined parameter (page 13 eq 23); and a switch for routing the packet data

traffic (fig 2A item 14). Fig 2A item 12B is the selection and distribution unit. Fig 2A item 14 is the gateway. Fig 10 shows operation over a forward and reverse link, and page 3 paragraphs 43 and 46 discuss the forward and reverse links, wherein after recognition of activity on both, the apparatus by applying the measuring total packet data as described above has determined communication in both directions, or symmetric communications.

16. With regard to claims 20-21 and 23, the apparatus as described in the rejection of claims 15-19 is the same as that which performs the method of claim 5, which includes the same elements as the operation of the apparatus recited in claim 20. The switch is the channel element 42 of fig 2A. Fig 10 and page 3 paragraphs 43 and 46 describe the operations over the forward and reverse links, the gateway is fig 2A item 14.

17. Claims 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,741,556 to Seddigh et al.

18. With regard to claim 8, Seddigh discloses a method for classifying a service class for transmission of packet data in a two-way communication network which supports transmission of packet data having various quality of service comprising the steps of determining whether a first parameter associated with characteristics of the service class is symmetric or not (col 7 lines 48-54 depict that data may be transferred in both directions between MS 102 and server 100, and the existence of both represents

symmetry in that traffic moves in both directions as opposed to one, which would represent asymmetry, and the parameter is the existence of flow in a direction in that it would "mark the beginning of a new request and a new transaction" as set forth in column 7 lines 44-46); determining whether a second parameter associated with a period of the service class is short or not (interpacket arrival time, col 5 lines 57-58, wherein if it is less than or equal to M it is short); and calculating a value to classify the service class of packet data by using the first and second parameters (figs 2 A,B,C, and E show state transition diagrams that the above parameters, or results of decisions, supply logic to such that they may result in a classification state, or calculated value, of the traffic).

19. With regard to claims 9 and 10, Seddigh discloses all aspects of the invention of claim 8 and further discloses that the step of determining the first parameter (determining the first parameter as set forth in the rejection of claim 8) further comprises the steps of measuring a total number of packet data (comparison is made to X or Y, total packets of a given size, so a count must take place) for a period of time (time required to achieve the count) associated with the classification of service classes (IQR, Burst, or Bulk) and determining the parameter based on whether the measured number of packet data is larger than a threshold value associated with characteristics of the service class (at least, col 5 line 15) (see col 5 lines 10-33), wherein the measuring step is implemented over a forward link and a reverse link as communication takes place in both directions.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,023,456 to Chapman et al.

23. With regard to claim 2, Chapman discloses all aspects of the method of claim 1 and including that the communication network is two-way, and it would be obvious to one ordinarily skilled in the art at the time of the invention to implement the measuring step over a forward and reverse link. For example, one of the classifications cited in the rejection of claim 1 is Low Latency. This includes voice (col 4 lines 17-29), and two-way voice would include similar streams in both forward and reverse directions of

communication, wherein each of the similar streams would be classified similarly. The motivation to do so would be to provide effective two way communication by appropriately classifying both streams all users perceive the appropriate quality of service.

24. With regard to claim 3, Chapman discloses all aspects of the invention of claim 1, and implementation of the measuring over the forward and reverse links is shown in the rejection of claim 2. Based on the rejection of claim 2, it would have been obvious to one ordinarily skilled in the art to include the measuring of the total packet number step in both directions. The motivation to do so would have been as set forth in the rejection of claim 2.

25. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,741,556 to Seddigh et al. in view of US PGPUB 2004/0013089 submitted by Taneja et al.

26. With regard to claims 11 and 12, Seddigh discloses all aspects of the invention of claim 8 and further disclose implementing methods over forward and reverse links but does not explicitly disclose using the jitter value technique to determine the parameter. However, Taneja discloses the other aspects of claim 11 as set forth in the rejection of claim 5. It would have been obvious for one ordinarily skilled in the art at the time of the invention to include the determination of the jitter parameter with the method of claim 8

to arrive at the method of claim 11, since using the jitter method results in a period which is used to determine service class. The motivation to do so is two-fold: jitter is an important parameter in wireless communications as is disclosed by Taneja in paragraph 0114, and the period represented by jitter are commonly less than 100 ms (which is the typical period disclosed by Seddigh), but Seddigh states in col 5 that its disclosed invention is not limited to the specific value.

27. Claims 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPUB 2004/0013089 submitted by Taneja et al. in view of US Patent 6,741,556 to Seddigh et al.

28. With regard to claims 24-28, Taneja discloses the apparatus as set forth in the rejections of claims 15-23. Seddigh discloses the method performed by the apparatus recited in claim 24 as set forth in the rejections of claims 8-10. The method of classifying data packet flows disclosed by Seddigh can be implemented in the apparatus disclosed by Taneja to arrive at the invention. It would have been obvious to one ordinarily skilled in the art at the time of the invention to do so. The motivation for one to do so would have been that the apparatus disclosed by Taneja and the method disclosed by Seddigh performed very similar functions classification functions, with the method disclosed by Seddigh having the additional step of determining that the period of service class is short or not. Taneja discloses functionality on both a forward and reverse link as set forth in the rejection of claims 15-19, and Taneja discloses the

second parameter determination with respect to a jitter value as set forth in the rejection of claim 5. Claim 28 provides no additional limitations over claim 24 and is therefore rejected on the same grounds.

Allowable Subject Matter

29. Claims 7 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Cao et al (US 6,917,588), Apparatus and Method for Classifying Data Packet Flows.

b. Bushkirk et al (US 6,901,052), System and Method for Policing Multiple Data Flows and Multi-Protocol Data Flows

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Heinrichs whose telephone number is

571-272-8397. The examiner can normally be reached on Monday through Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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8/8/05